

10/088780

JCIS Rec'd PCT/PTO 20 MAR 2002

- 21 -

CLAIMS:-

1. A pharmaceutical composition for protection of an animal against a disease-causing agent, the composition comprising
5 a non-infectious nucleic acid construct encoding a recombinant antibody to that agent.
2. A pharmaceutical composition according to claim 1 wherein the animal is a mammal or a fish.
10
3. A pharmaceutical composition according to either of claims 1 or 2 wherein the animal has a deficient immune system.
- 15 4. A pharmaceutical composition according to any preceding claim wherein the disease-causing agent is a pathogen, an allergen or a toxic substance.
5. A pharmaceutical composition according to any preceding
20 claim wherein the protection is prophylactic.
6. A pharmaceutical composition according to any preceding claim wherein the encoded recombinant antibody is derived from an antibody raised against the disease-causing agent.
25
7. A pharmaceutical composition according to any preceding claim wherein the encoded antibody molecule comprises variable domains of immunoglobulin Heavy and Light chain genes linked together by a linker sequence.
30
8. A pharmaceutical composition according to any preceding claim, wherein the nucleic acid construct further comprises a gene sequence encoding a secretion signal peptide.

BEST AVAILABLE COPY

- 22 -

9. A pharmaceutical composition according to any preceding claim comprising genes encoding antibody molecules to several different epitopes of the disease-causing agent.
- 5 10. A pharmaceutical composition according to any preceding claim comprising a gene-expression library encoding antibodies to the disease-causing agent.
11. A pharmaceutical composition according to claim 10
10 wherein the gene expression library encodes single-chain antibody molecules to the disease-causing agent.
12. A pharmaceutical composition according to any preceding claim wherein the encoded recombinant antibody is a virus-
15 neutralising antibody.
13. A pharmaceutical composition according to claim 12 wherein the encoded virus-neutralising antibody is single chain molecule.
- 20
14. A pharmaceutical composition according to any preceding claim including a nucleic acid construct encoding a viral haemorrhagic septicaemia virus VHSV-neutralising monoclonal antibody 3F1H10 with two amino acids substituents in the H-
25 chain gene respectively Asn 35a to Thr and Lys 64 to Thr and with the secretion signal of rainbow trout transforming growth factor (TGF-beta) added to the 5' end of the gene.
15. A pharmaceutical composition according to any of claims
30 4 to 11 wherein when the disease-causing agent is an allergen the antibody molecule is derived from an antibody raised against IgE molecules.

BEST AVAILABLE COPY

- 23 -

16. A pharmaceutical composition according to any preceding claim wherein the nucleic acid construct is formed from DNA.

17. A pharmaceutical composition according to any preceding
5 claim wherein the composition is in the form of a vaccine, dosage form, cream, ointment, liquid or paint.

18. A pharmaceutical composition according to any preceding claim wherein the composition is for delivery by injection,
10 spray or gene gun.

19. A method of treating an animal comprising administering thereto a pharmaceutical composition as claimed in any of claims 1 to 18.

15

20. A pharmaceutical composition according to any preceding claim, for use to confer protection against a disease caused by a pathogen, an allergen or a toxin.

BEST AVAILABLE COPY